Department of Computer Science and Engineering

Course code: CSE 302

Database Management System Sessional

Project

On

Railway Management System

Submitted by Group 23

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Introduction:

The Railway Management System facilitates the passengers to enquire about the trains available on the basis of source and destination, booking, enquire about the status of booked ticket etc. The main aim of this project is to design and develop a database maintaining the records of different trains, tickets, prices and passengers.

Our project is a computerized system of reserving the seats of train seats in advance. It is mainly used for long routes. Online reservation has made the process for reservation of seats very much easier than ever before.

Present System:

At present in our country Bangladesh, people buy their tickets from counters present at the railway stations. There is no facility of online ticketing in our country. This has some major drawbacks:

- People can't get idea about pricing of tickets beforehand.
- Huge rush at the station.
- Tough to manage the counters during rush hour.
- People has to reach the station early to buy their tickets.
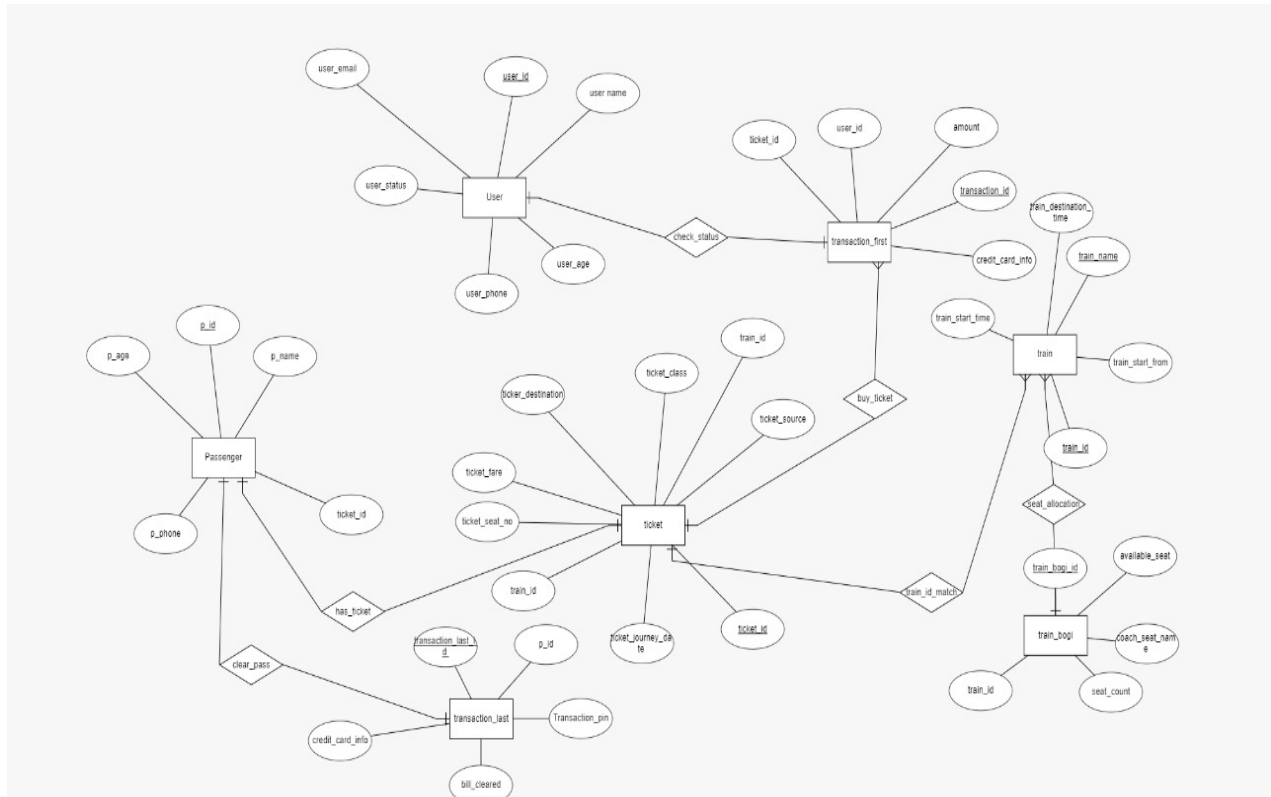- Sometimes when people don't get any ticket they fall in major crisis.

In this present context, the mass population highly feel the necessity of a railway management system for a smooth customer experience. It will save their time and the journey will be hassle free.
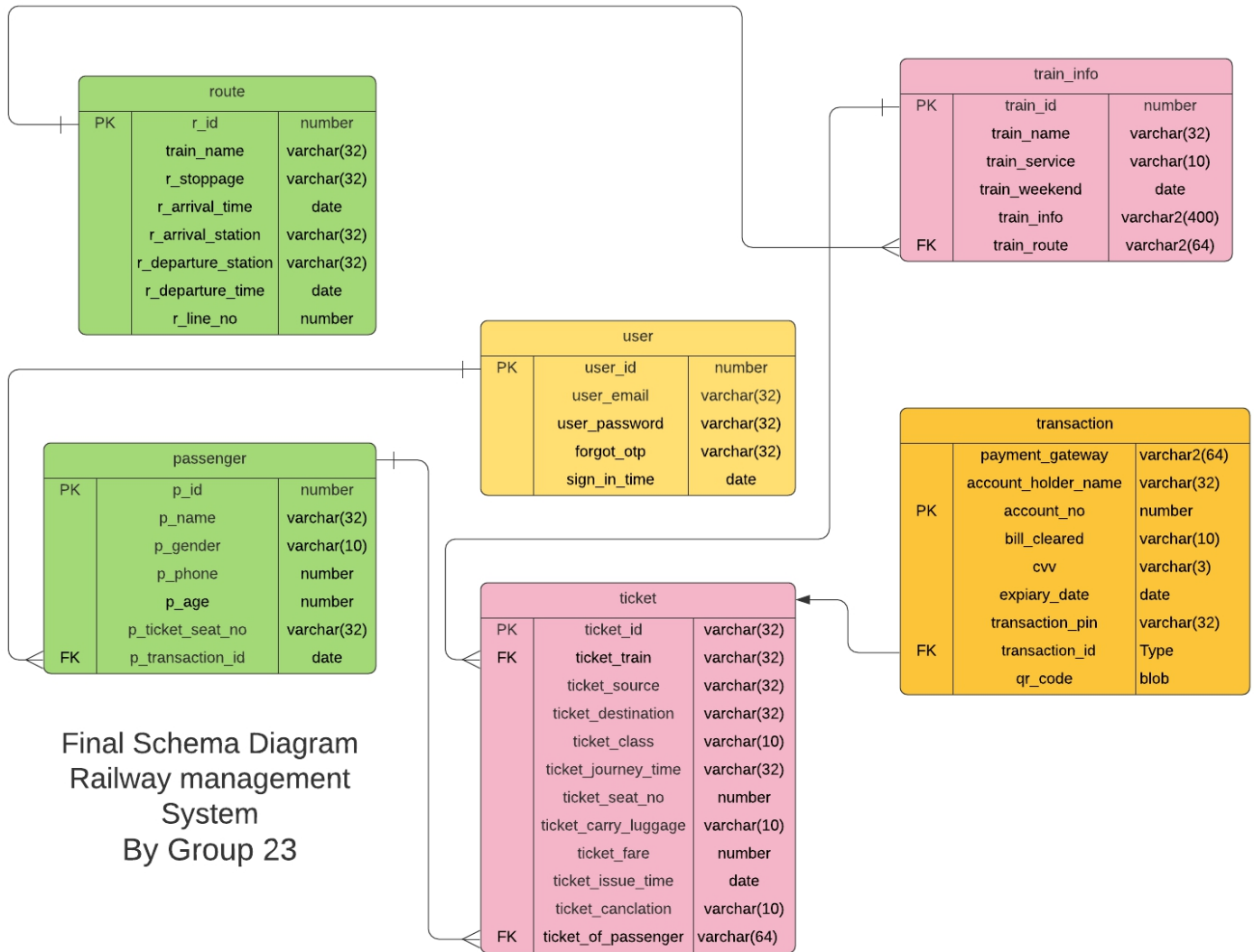
Proposed System:

The main purpose of maintaining database for Railway Management System is to reduce the manual errors involved in the booking and cancellation of tickets and make it convenient for customers and providers to maintain the data about their customers and also about the seats available. Due to automation many loopholes that exists in the manual maintenance of the records can be removed. The speed of obtaining and processing the data will be fast. So to solve all problems we designed a database which includes customer details, availability of seats, number of trains and their details.

Passengers can book their tickets for the train in which seats are available. Before booking a ticket for a passenger, the validity of train and seats is checked. If seat is available, then the ticket is booked for that customer with confirm status and corresponding ticket ID is generated.

ER Diagram:

Schema Diagram:

route
PK	r_id	number
	train_name	varchar(32)
	r_stoppage	varchar(32)
	r_arrival_time	date
	r_arrival_station	varchar(32)
	r_departure_station	varchar(32)
	r_departure_time	date
	r_line_no	number

train_info
PK	train_id	number
	train_name	varchar(32)
	train_service	varchar(10)
	train_weekend	date
	train_info	varchar2(400)
FK	train_route	varchar2(64)

user
PK	user_id	number
	user_email	varchar(32)
	user_password	varchar(32)
	forgot_otp	varchar(32)
	sign_in_time	date

passenger
PK	p_id	number
	p_name	varchar(32)
	p_gender	varchar(10)
	p_phone	number
	p_age	number
	p_ticket_seat_no	varchar(32)
FK	p_transaction_id	date

transaction
	payment_gateway	varchar2(64)
	account_holder_name	varchar(32)
PK	account_no	number
	bill_cleared	varchar(10)
	cvv	varchar(3)
	expiary_date	date
	transaction_pin	varchar(32)
FK	transaction_id	Type
	qr_code	blob

ticket
PK	ticket_id	varchar(32)
FK	ticket_train	varchar(32)
	ticket_source	varchar(32)
	ticket_destination	varchar(32)
	ticket_class	varchar(10)
	ticket_journey_time	varchar(32)
	ticket_seat_no	number
	ticket_carry_luggage	varchar(10)
	ticket_fare	number
	ticket_issue_time	date
	ticket_canclation	varchar(10)
FK	ticket_of_passenger	varchar(64)

Final Schema Diagram
Railway management
System
By Group 23

Development of system:

We tried to make an web-app which will be handled automatically the ticketing system of train train travelers. We tried to make an advance system where no ticket is needed!! just choose your suitable train, book it, pay the transaction via mobile banking or card medium then you will be provided a qr-code. Just show that in terminal/station & your pass will be verified. Now traveler can enjoy the train ride.

System Requirement:

Our whole system is designed via python django web framework and oracle database. This is web based application so if we host it in some live web server then only system requirement will be internet & a device. Though the listed items are used to build this project:

1. Django

2. cx_oracle

3. Django-debug-toolbar

4. Django-phonefield

5. Django-filters

6. Ide like vs-code/pycharm

Discussions:

Using this database, we can minimize errors and reduce hassles. All records can be preserved and there will be no risk of data loss. It is a great facility for both passengers and the management.

Database keeps all the information in an organized manner. To it is ready to create, read, update and delete data in the database. All problems currently faced by

passengers while travelling by train can be solved by this data base management system. We just need proper management and maintenance of the database.

This is how we will be to solve these real life problems with the help of technology and make the world a better place to live.

Limitations and further expansion:

Our project has some limitations like, we don't have the feature to track the trains' exact location at an instant. We had considered the most important requirements only, many more features and details can be added to per project in order to obtain even more user friendly applications. These applications are already in progress and in future they can be upgraded and may become part of amazing technology.

Conclusion:

In our project Railway Management system, we have stored all the information about the trains scheduled and the users booking tickets and even status of tickets etc. This database is helpful for the applications which facilitate passengers to book the train tickets and check the details of trains.

Our project link: click here